Feb. 10, 1925. 1,525,846

L. E. WURTZEBACH

SILENCING DEVICE FOR FIREARMS

Filed June 11, 1924

Fig. 1.

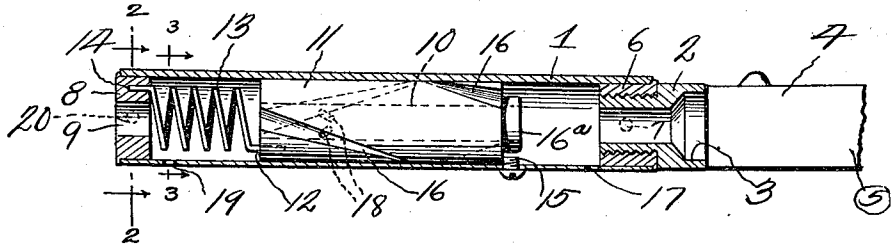


Fig. 2.

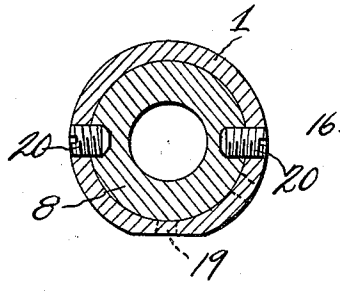


Fig. 3.

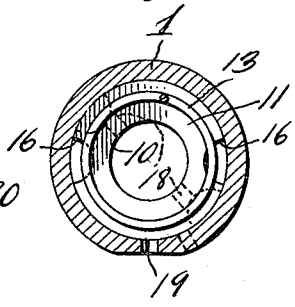


Fig. 4.

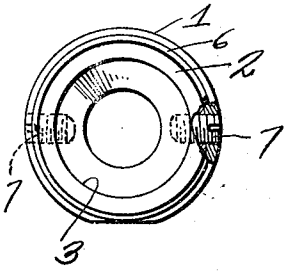
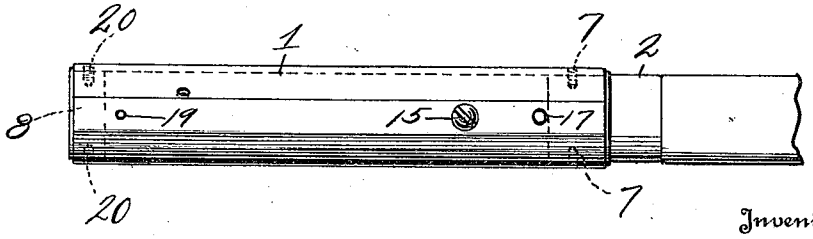


Fig. 5.



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UNITED STATES PATENT OFFICE.

LORENZ EDWARD WURTZEBACH, OF LEAD, SOUTH DAKOTA.

SILENCING DEVICE FOR FIREARMS.

Application filed June 11, 1924. Serial No. 719,321.

To all whom it may concern:

Be it known that I, LORENZ EDWARD WURTZEBACH, a citizen of the United States, residing at Lead, in the county of Lawrence, State of South Dakota, have invented a new and useful Silencing Device for Firearms; and I do hereby declare the following to be a full, clear and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention relates to silencing devices for firearms and has for its object to provide a device of this character particularly adapted for use in connection with rifles, and constructed in a manner whereby the device is compact and will not interfere with the aiming operation or materially affect the balance of the rifle. The device may be used in connection with other types of firearms.

A further object is to provide a silencing device comprising a cylindrical casing adapted to be secured to the muzzle of a gun and provided with a longitudinally movable core therein, which core is normally held in rearward position by means of a coiled spring, and through a bore of which core a bullet passes in its passage through the silencer, at the same time compressing the spring, thereby reducing the sound and recoil after a firing operation.

A further object is to provide the cylindrical sleeve with a vent port in communication with the atmosphere adjacent the muzzle carried end of the device and forming means whereby as a bullet passes through the sleeve the vacuum created behind the bullet adjacent the muzzle of the gun will be replaced with air, thereby silencing the sound incident to the explosion, and confining the sound within the cylindrical sleeve.

A further object is to provide the outer periphery of the slidable core with spirally arranged grooves for retarding and twisting the gases from the explosion after the muzzle blast has been split by a rearwardly extending shoulder carried by the slidable core.

A further object is to provide vent ports connecting the bore of the core and the spiral grooves for allowing surplus gas around the bullet to escape from the bore, thereby aiding the bullet in its flight.

With the above and other objects in view the invention resides in the combination and arrangement of parts as hereinafter set forth, shown in the drawing, described and claimed, it being understood that changes in the precise embodiment of the invention may be made within the scope of what is claimed without departing from the spirit of the invention.

In the drawing:—

Figure 1 is a vertical longitudinal sectional view through the silencer.

Figure 2 is a vertical transverse sectional view taken on line 2—2 of Figure 1.

Figure 3 is a vertical transverse sectional view taken on line 3—3 of Figure 1.

Figure 4 is view in elevation of the rear end of the silencer.

Figure 5 is a bottom plan view of the silencer.

Referring to the drawing, the numeral 1 designates the cylindrical casing, and 2 a muzzle sleeve carried by the inner end thereof, which muzzle sleeve is adapted to receive in its counterbore a muzzle 4 of a gun barrel 5 for attaching the device to a gun. However if desired the muzzle sleeve 2 may be eliminated and the muzzle 4 provided with a reduced threaded portion and adapted to thread into the sleeve 6. The sleeve 6 and muzzle sleeve 2 are held in the cylindrical casing 1 by means of screws 7 which are threaded through the casing 1 and said sleeves 6 and 2. Disposed within the outer end of the cylindrical casing 1 is a bushing 8, which bushing is provided with an opening 9 axially disposed in relation to the casing 1 and muzzle sleeve 2, therefore it will be seen that a bullet passing from the muzzle 4 of the gun will pass axially through the sleeve 2 and bushing 8 and also through the axially alined bore 10 of a slidable core 11 disposed within the casing 1. Connected to the slidable core 11 at its forward end and at 12 is a coiled spring 13, the other end of which spring is connected at 14 to the bushing 8. Spring 13 forms means for maintaining the slidable core 11 in normal inoperative position as shown in Figure 1 with its rear end in engagement with the stop screw 15 carried by the cylindrical casing 1, however when a bullet is passing through the bore 10 of the slidable core 11, said core 11 will be forced forwardly, thereby compressing the

spring 13, and consequently the recoil of the gun is reduced to a minimum, however after each firing operation the coiled spring 13 forces the core 11 to its rearward position as shown in Figure 1. The outer periphery of the core 11 is provided with spirally arranged grooves 16, through which grooves a portion of the gases from the muzzle blast passes, is retarded and twisted, thereby eliminating the sound. The other portion of the blast passes through the bore 10, however the splitting of the gases is accomplished by means of the annular flange 16[a] carried by the rear end of the slidable core 11. As the bullet leaves the sleeve 2, it creates a vacuum in the rear end of the cylindrical casing 1, however air enters the casing 1 through the vent 17, consequently the noise of the report is reduced to a minimum, and confined entirely within the casing 1. The bullet continues in its movement through the bore 10 of the slidable core 11, however the core 11 is provided with angularly disposed vent ports 18 which connect the spiral groove 16 and the bore, and through which vent, surplus gases around the bullet escape, thereby aiding the bullet in its flight. The core 11 moves forwardly with each discharge, reducing the sound and also the recoil. Spring 13 returns the core to normal position after each operation thereof. Casing 1 adjacent the bushing 8 is provided with a vent 19 for admitting air behind the bullet as it passes through aperture 9 in the bushing, thereby further muffling the sound.

From the above it will be seen that a silencer is provided which is small, positively silences the sound, reduces flash, and one which does not hang below the barrel thereby affecting the balance of the firearm.

It will also be seen that the device may be easily and quickly cleaned by removing the set screws 20 carried by the outer ends of the casing 1, and which set screws hold the bushing 8 in place, and when said bushing is removed spring 13, and the slidable core 11 may be easily removed.

The invention having been set forth what is claimed as new and useful is:—

1. A gun silencer comprising a cylindrical casing having a chamber therein, means carried by one end of said casing for securing the same to a gun barrel, a bushing disposed in the outer end of the casing, a core slidably mounted within the chamber of the casing, a coiled spring interposed between the forward end of the core and the bushing, means for limiting the rearward movement of the core, means for admitting air to the chamber of the casing between the rear end of the core and the rear end of the casing, said core having its outer periphery provided with longitudinally extending grooves and ports of communication between said grooves and a bore of the core.

2. A gun silencer comprising a cylindrical casing, a core slidably mounted in said casing and having a bore therein having ports of communication with spirally arranged grooves carried by the outer periphery of the core, an apertured bushing disposed in the outer end of the casing, a coiled spring interposed between said bushing and said core, and forming means for forcing the core rearwardly after a forward movement thereof, means for limiting the rearward movement of the core, said casing adjacent its rear end and rearwardly of the core being provided with means for limiting the rearward movement of the core.

3. The combination with a gun silencer comprising a casing, a core slidably mounted in said casing against and under the influence of a coiled spring, means for admitting air to the casing rearwardly of the core, said core being provided with a bore and longitudinal gas escape grooves in the outer periphery of the core, of means for splitting the gases whereby a portion thereof will pass through the bore and a portion through the grooves.

4. The combination with a gun silencer comprising a casing, a core slidably mounted in said casing against and under the influence of a coiled spring, means for admitting air to the casing rearwardly of the core, said core being provided with a bore and longitudinal gas escape grooves in the outer periphery of the core, of means for splitting the gases whereby a portion thereof will pass through the bore and a portion the grooves, said means comprising an annular flange carried by the rear end of the core and surrounding the bore therein.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

LORENZ EDWARD WURTZEBACH.

Witnesses:
C. R. SUSSIER,
E. KRAUS.